EXHIBIT 18A

Forensic Building Science, Inc.

Storm Damage Report

for

Knights Inn
1121 9th Avenue SW
Bessemer, AL 35023

UNVERIFIED

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Client:
Howarth Group

Project Address:
Knights Inn
1121 9th Avenue SW
Bessemer, AL 35023

Jefferson County

Insurance Carrier: Chubb Custom Insurance Company, Policy #: 99783420-00
Insurance Claim #: WKFC-5689A9

FIELD REPORT FOR INITIAL STORM DAMAGE INVESTIGATION

1.0 Background Information:

1.1 Forensic Building Science, Inc. (FBS) was asked to provide an inspection of the roofs of the above-mentioned property to ascertain the extent of damage caused by tornadic winds which was reported to have occurred on April 28, 2014.

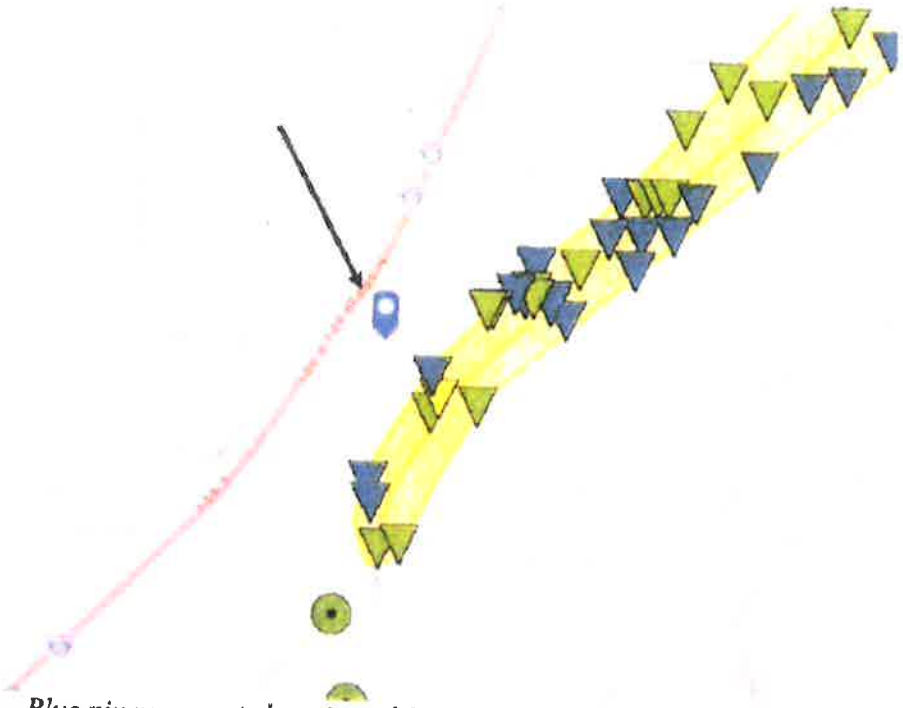
1.1.1 Reference information on storm event (tornados ranging in scale from EF1-EF2):

- Details on EF2 tornado with 120 mph winds
  http://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=523012
- Details on EF1 tornado with 105 mph winds 3 miles to the NW
  http://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=523004
- Details on EF0 tornado 10 miles to the west
  http://www.ncdc.noaa.gov/stormevents/eventdetails.jsp?id=522988
- Local news story
  http://www.kptv.com/story/25369544/9-deaths-reported-as-fast-moving-tornadoes-rattle-the-south

Storm Event Narrative from NOAA report #523012:
"The tornado touched down near Academy Drive and Southgate Lane in Bessemer and traveled to the northeast, snapping and uprooting dozens of trees along its path. In addition, dozens of homes sustained damage from downed trees. The tornado intensified with winds of 120 mph as it neared the Frank House Municipal Golf Course where the clubhouse was destroyed. The tornado continued on its northeast path, crossing the golf course, snapping and uprooting

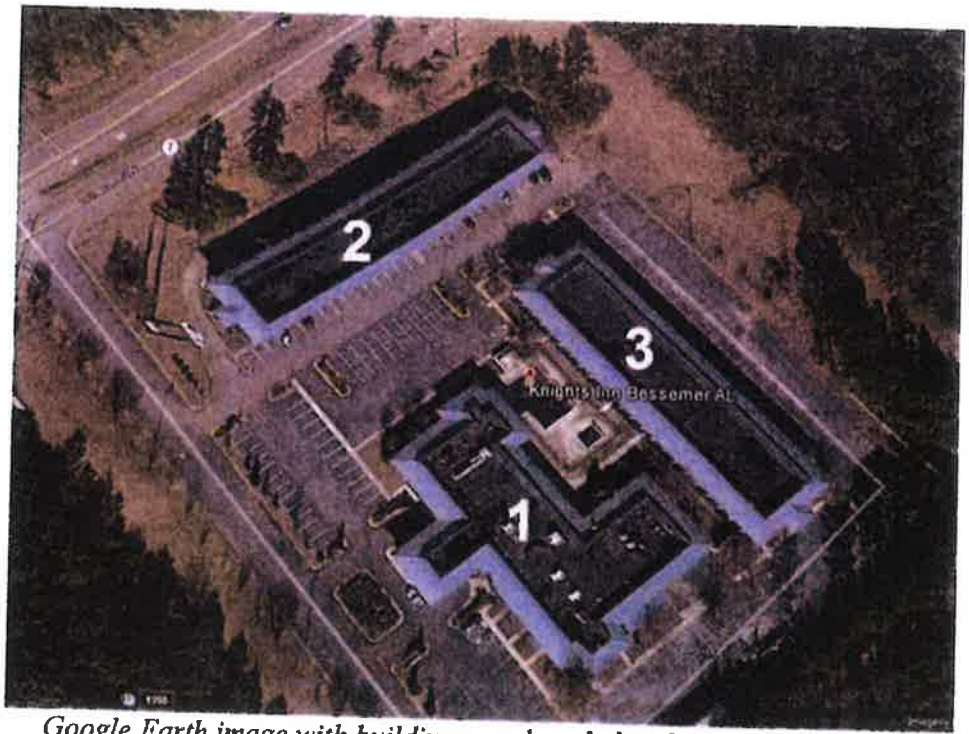
hundreds of trees. Several homes and an apartment complex sustained significant roof damage around Memorial Drive. The tornado continued to the northeast as it paralleled 4th Avenue North. The tornado took a slight turn to the east as it crossed Alabama Highway 150, causing minor damage to a home and small restaurant. Hundreds of trees were uprooted through Bessemer, before the tornado lifted near the intersection of Dartmouth Avenue and 31st Street South."

Image depicts the tornado's path as described in the narrative from NOAA Report #523012.



Blue pin represents location of the property (0.15 miles from the tornado).

1.2 **Satellite overview**



Google Earth image with buildings numbered, dated December 12, 2013.

Forensic Building Science visited the site and took photos to document damaged locations. These photos are attached to this report.

1.3 Forensic Building Science personnel present at this inspection:
- Jim Irmiter, Field Investigator (July 7 - 9, 2015).
- Adam Piero, Field Investigator (July 7 - 9, 2015).

1.4 The following documents have been received:
- Chubb Custom Insurance Policy.
- Capture Citizen Access info on Building 1-3.
- Realtrac info on Knights Inn property.
- York SLA Estimate ($34,597.92) dated April 2, 2015
- Google Maps imagery of property.

1.5 According to Jefferson County Capture Citizen Access, Building 1 was constructed in 1974 [1969], and Buildings 2 and 3 in 1974 [1972] and all three buildings total 78,310 square feet.

1.6 The property consists of three low rise commercial buildings. One single-story building serves as a lobby, ballroom and office facilities for the hotel. The remaining structures are two-story buildings and house hotel guests (R-1 occupancy in current building codes).

1.7 Exterior wall finishes consist of the following:
- Brick on masonry.
- Stucco on lath.

1.8 At the time of our inspection portions of EPDM roof had been temporarily repaired with patches and tarps (see section 2.2.2 of this report).

1.9 The following additional documents were used for reference:
- 2009 Building Code of Jefferson County, Alabama. (See Ordinance 1800)
- 2009 International Building Code.
- ANSI/ASHRAE/IESNA Standard 90.1-2007 Energy Standard for Buildings Except Low-Rise Residential.
- Photographs and thermal imaging taken by Forensic Building Science.
- Haag Certified Roof Inspector Program – Commercial edition – Course Workbook.
- Construction-Generated Moisture and Its Effect On Roofing Systems, Single Ply Roofing Industry (SPRI) Technical Report, August 2008.
- Assessing water damage to gypsum board, GA 231-06, Gypsum Association.
- Relationship between Moisture Content and Mechanical Properties of Gypsum Sheathing–Phase 2 Research." McGowan, *11th Canadian Conference on Building Science and Technology*, held at Banff, Alberta. 2007.
- ESR 1463, Carlisle EPDM, PVC, and TPO single-ply roofing membranes, Carlisle Syntec, reissued July 2014.

- Attaching Metal Decking, Sputo, Yantz, Criste, Modern Steel Construction, March 2010.
- ASTM D4637-2010 Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane.
- Arc-Puddle Welds and Weld Washers for Attachments in Steel Deck, Luttrell, Steel Deck Institute, reissued Jan 17, 2007.
- Deck Damage and Penetrations, Heagler, R, Steel Deck Institute, revised 2000.
- Designing with Vulcraft Steel Joists, Joist Girders, and Roof Deck, Fisher, West, and Van De Pas, Nucor Corporation, 2nd edition, 2002.
- Design of Fire-Resistive Assemblies with Steel Joists, Schultz, Modern Steel Construction, April 2003.
- Design Of Fire Resistive Assemblies With Steel Joists, Technical Digest No. 10, Steel Joist Institute, 2003

1.10 **Inspection notes:**

Google Earth, Imagery Date 12/17/2013 (before storm), approx. 2,600 ft radius.

Google Earth Imagery Date 2/6/2015 – large areas of trees to east and south gone.

- Area is surrounded by open space and sparse low-rise commercial buildings which is inconsistent with the definition of Exposure B in ASCE 7, Exposure C applies.

Surface Roughness B: Urban and suburban areas, wooded areas, or other terrain with numerous closely spaced obstructions having the size of single-family dwellings or larger.

6.5.6.3 Exposure Categories

Exposure B: Exposure B shall apply where the ground surface roughness condition, as defined by Surface Roughness B, prevails in the upwind direction for a distance of at least 2,600 ft (792 m) or 20 times the height of the building, whichever is greater.

- Roof deck is corrugated metal (e.g. 'B deck' or similar). Polynesian roof substrate is unknown.
- Roofing type: Raised rib metal panels. Unballasted EPDM.
- Metal roof pitch: not measured.
- EPDM roof pitch: low-slope.
- Roof Fastening: **Surface driven screws**
- Observed damage on roofs of all buildings. Damage included bent, buckled, permanently deformed, crimped and peeled roof metal flashings and panels.
- Some peeling of EPDM seams noted.
- Mechanically damaged metal roof panel in at least one location (Building 3).

- Interior water damage beneath the low slope EPDM membrane.
- Small water pools on roof (Note 3.18" (record) rainfall on July 4, 2015.)
- Membrane is not abnormally taut, which would indicate EPDM shrinkage.
- Buildings are not sprinklered.

2.0 **Site Observations:**

2.1 **Main Roofs**

2.1.1 Design and construction of the buildings are similar in all cases. Some observations are generalized from individual observations of buildings. All three buildings were inspected.

2.1.2 The building roofs are EPDM surrounded by a raised rib metal panel Polynesian style roof on all sides.

2.1.3 Mechanical damage was observed (see Figures 58-61 AP 07-08-2-15).

2.1.4 The building has a central low-slope roof covered with an ethylene propylene diene monomer (EPDM) roofing membrane. There was no manufacturer's marking on the EPDM.

2.1.5 While there are no manufacturer's specifications identified for the metal roof panels, installation was consistent with other roofs of this type and design we have inspected. EPDM is marked but does not state manufacturer. Thickness of EPDM is 60 mils, based on the manufacturer mark.

2.1.6 The EPDM is unballasted. Distress related to shrinkage (tight membrane) was not observed.

2.1.7 There were some areas where the seams had become at least partly unsealed, similar to T-peel where two pieces of membrane overlap and are sealed/joined to each other during installation. Given the water intrusion reported after the event to the interior, there are areas where the seam has been broken completely, finding these areas will best be performed with a reflected ceiling plan showing where water damaged tiles are located. Missing ceiling tiles in areas will complicate this task. Seams in some locations were at least partially intact.

2.1.8 These peeled seams are locations are possible sources for the interior water intrusion. However, there are many more locations where interior leaks are occurring other than the areas directly below the partially unsealed seams which run across the roof in lines. There are two possibilities – water entering the seams travels on the metal deck (essentially flat) that carries water up to 45 feet away until a breach is located, or from water entering at hail damaged areas and following a similar path. Seam failure is difficult to trace backwards from water intrusion due to the nature of the construction. Topside water breaching the membrane can enter at any point along the metal deck (typically 36" wide and as

long as practical) where it is attached to the open-web steel joists below due to typical 'burn through' of the field puddle welding used to typically attach these decks (See Sputo, and Luttrell).

2.1.9 **Inspection Observations:**

2.1.10 **Building 1** (lobby, ballroom, office and restrooms). Note: References to all Figures refer to Knights Inn Building 1- Photo Log 07-08-15 & 07-09-15 AP & JDI.

- Missing pieces of flashing on metal roof. (Figures 14 & 15)
- Multiple areas where flashing is bent. (Figures 03 & 08)
- Damaged and distorted metal panels. (Figure 16)
- Signs of crimping of metal flashing. (Figure 19)
- Large areas of main roof tarped. (Figures 29, 30 & 32)
- One A/C unit condensate line leaking and draining on to roof causing large shallow pool of water. (Figure 31)
- Multiple seams partially peeling (T-peel). (Figures 36, 43 & 44)
- Multiple areas with patching and caulking around the seams. (Figures 35, 37)
- Patch with air bubble. (Figure 41)
- Damage track across panel. (Figure 58-60)
- Debris damage (Figure 61).
- Metal pulled over fasteners (Figure 73).
- Previous roof hot mopped to LWIC (Figure 83).

Core Cut #1:

- Located 15' from east wall and 20' from north wall.
- 60 millimeter EPDM single ply membrane. (Figure 46)
- 1/2" of actively wet fiberboard. (Figure 79)
- previous roof membranes left in place, ≈ 3 (Figure 82).
- 2" of LWIC.
- Corrugated roof deck.

Core Cut #2:

- Located 16' from west wall and 51' from south wall.
- 60 millimeter EPDM single ply membrane.
- visually ½" of actively wet fiberboard cover board, saturated (Figure 92).
- previous roof membranes left in place, ≈ 3 (Figure 98).
- Tan cementitious material, visually LWIC, wet (Figure 99).

Lobby observations:
- Water staining on ceiling tiles observed. (Figure 102)
- Missing ceiling tile. (Figure 105)
- Water damaged insulation. (Figure 110)
- Efflorescence and water damage on underside of deck observed. (Figure 112)

Ballroom observations:
- Water damaged carpet. (Figure 116)
- Water damaged ceiling tiles (Figure 117)
- Efflorescence and water staining on underside of deck observed. (Figure 119)
- Missing ceiling tiles and water damaged ceiling tiles. (Figure 122)
- Water damaged "sound deadening" insulation. (Figure 123)

Office observations:
- Water damaged ceiling tiles. (Figure 129)
- Missing ceiling tiles. (Figure 130)

Bathroom observations:
- Men's - Sagging and water damaged ceiling tiles observed. (Figure 135)
- Women's – Water damaged and missing ceiling tiles observed. (Figures 139, 140)
- Women's - Water damaged (discolored) floor tiles observed. (Figure 141)

2.1.11 **Building 2** (80 Units): **Note:** References to all figures refer to Knights Inn Building 2- Photo Log 07-08-15 & 07-09-15 AP & JDI.

- Missing pieces of flashing on metal roof. (Figure 18)
- Loose metal flashing. (Figure 21)
- Multiple areas where flashing is bent or crimped. (Figure 16)

- Shallow pools of water in areas on roof. (Figure 14)
- Multiple seams partially peeling (T-peel). (Figures 54-56)
- Tear in metal flashing observed. (Figure 25 & 27)
- Loose screw at loose flashing. (Figure 32)
- Metal pulled over fasteners (Figure 36).

Core Cut #1:

- Located 8' from south wall and 10' from west wall.
- EPDM with active water (Figure 38).
- 1/2" of saturated fiberboard (Figure 39).
- previous roof membranes left in place, ≈ 3 (Figure 44).
- 2" of wet foam insulation (Figure 44).
- 2" Lightweight insulating concrete (LWIC).
- Corrugated metal roof deck.

Core Cut #2:

-Located 3' from south wall and 10' from west wall.
- Fiberboard peeled off with membrane (Figure 63).
- Fiberboard saturated (Figure 67).
- Previous roof membranes, ≈ 3 (Figure 69).
- 2" wet foam insulation – visually isocyanurate rigid foam board. (Figure 69).
- Wet LWIC substrate (Figure 71).

2.1.12 **Building 3** (79 Units): **Note:** References to all figures refer to Knights Inn Building 3- Photo Log 07-08-15 & 07-09-15 AP & JDI

- Evidence of minor water evaporation zones. (Figure 20)
- Multiple seams partially peeling (T-peel). (Figures 14, 23-26)
- EPDM seam patches. (Figure 16)
- Water pooled near peeled/loose EPDM seam. (Figure 22)
- Crimping of metal flashing. (Figure 30)

Core Cut #1:

- Located 4' from west expansion and 4' from north wall.
- Active water on underside of EPDM (Figure 41).
- 1/2" of saturated and friable fiberboard (Figure 42).
- previous roof membrane, ≈ 3 (Figure 49).
- 2" of foam insulation (Figure 45).
- 2" of actively wet LWIC (Figure 48).
- Corrugated metal roof deck.

Core Cut 2:

-Located 3' from the south wall and 10' from the west wall.
- Active water underneath EPDM (Figure 61).
- Saturated fiberboard (Figure 65).
- Wet rigid insulation (Figure 67).
- Base sheet (Figure 68).
- Friable and wet cementitious material (LWIC) (Figures 70-72).
- Corrugated metal deck.

Room 153:
- Room is completely missing ceiling tiles and most of insulation. (Figure 78)
- Water damaged ceiling tiles stored in room. (Figure 84)
- Corrosion on underside of corrugated metal deck. (Figure 81)

Office Observations:
- Missing ceiling tiles. (Figure 89)
- Corrosion on underside of corrugated metal deck. (Figure 91)

Room 254:
- Water damaged ceiling tiles. (Figure 98, 99)
- Efflorescence at metal deck seam (Figure 100).

Laundry Room Observations:
- Organic growth on ceiling grid. (Figure 105)
- Water damaged ceiling tiles observed. (Figures 106, 107)
- Corrosion and efflorescence on underside of corrugated metal deck. (Figure 110)
- Missing ceiling tiles. (Figure 110)
- Water damage and organic growth observed. (Figure 112)

Room 231 Observations:
- Room is missing ceiling tiles. Sound deadening insulation hanging down with exposed kraft faced paper. (Figure 118)

Room 222 Observations:
- Room is missing ceiling tiles and most of insulation. (Figure 120)
- Light corrosion on underside of corrugated metal deck. (Figure 121)

2.2 **Causation Statement**

2.3 Based upon information collected from the physical inspection, review of weather data, reports of interior water intrusion (and their observed locations) following the storm event, and physical roof assessment we have concluded that the metal roof and EPDM roof membrane are wind damaged and must be completely replaced. Various metal appurtenances are damaged and must be replaced.

Finding and fixing each individual failed seam (to be certain, putting an EPDM cover plate over every seam on the entire roof, or using trial and error and waiting several months to repeat the process, etc.) would likely be unsuccessful. It will also trap water inside the wet rigid insulation which was found during roof cores and will destroy the fiberboard (which is in our opinion adhered to the EPDM, turning it into a loose-laid system), and also force the water downward, causing additional interior damage as well as creating an environment for corrosion of the structural metal deck.

2.4 Based upon information collected from the physical inspection of the interior, much of the building's interior must be replaced. Replacements include carpeting

(where used), insulation (employed here as sound-deadening), drop down ceiling tile systems and some interior walls.

2.5 Based upon a reasonable degree of engineering certainty, it is more likely than not that the observed damage is a result of the subject storm event and due to storm-created openings in both the metal roof and the EPDM roof. On the reported date of loss, there was sufficient wind to cause the above-referenced damage.

2.6 Failure to replace the roof at the property will result in additional damage due to water intrusion. Water intrusion is already occurring. Storm-created openings in the EPDM seams particularly have allowed water intrusion to penetrate down into the rest of the roof assembly. This (currently) is an R-1 (Hotel) structure with fiberboard coverboard, rigid insulation and lightweight insulating concrete on metal form / structural deck and open web steel joists with an acoustical tile ceiling.

2.7 In our opinion, additional costs to repair will be required to meet the current required code and manufacturer's installation instructions (e.g. tapered insulation due to required slope of currently manufactured EPDM, restoration of fire-rated roof assembly, as the building is not sprinklered. Even if it were sprinklered it is still possible the roof is a fire-rated assembly).

2.8 In our opinion, additional costs to repair will be required to meet the current required code or manufacturer's installation instructions.

2.9 **Discussion of repair options**

2.9.1 The roof exhibits peeled seams, partially unsealed seams, and unsealed seams in various areas. The water damage to the ceilings in the buildings that cannot be fully explained by mere failure of the metal roof caps where the Polynesian/Mansard style roof intersects with the sloped wall for the flat part of the main roof. Water intrusion is coming in through the EPDM membrane.

2.9.2 EPDM, when it is damaged, it is exceptionally difficult to find the exact flaw/penetration/breach. It is our opinion the results of roof cuts, extents of interior damage, and thermal scanning indicate that the roof is compromised by small failures in the seams located randomly across the roof (T-peel failure) as a result of tension across the seam due to wind uplift. It is clear that the metal edge securement came off this roof. Particularly of interest is Figure 36, Building 2, and Figure 73, Building 1, where the metal pulled over the fasteners. There is a great deal of water under the EPDM membrane (see roof cores, with wet cover boards, wet rigid insulation, and high water content in the LWIC) that is not inherent to the system (as constructed) or 'wicking up' from below. This is roof water leaking downward and damaging the ceiling.

2.9.3 This building does not have sprinklers, as this is an R-1 occupancy under current codes, it is our expectation that in the original construction, this was a fire-rated roof assembly which depends upon the ceiling tile as part of that system. The

metal deck is not sprayed with fire-proofing, the Open Web Steel Joists are not fire-proofed, etc., (See Shultz). When the ceiling tile is removed or the ceiling tile is water-damaged, it must be replaced to restore the property to a pre-loss condition. This replacement tile must be matched to the existing tiles listed as acceptable in the UL fire-rated assembly (or a change to another fire-rated assembly may be entertained with a code review by a licensed architect). Mr. Irmiter and Mr. Johnson are familiar with these requirements and their impact on construction but a licensed architect will be needed to finalize any change to this system as explained here.

2.9.4 Assessment always must be based primarily on observations in the field, with secondary consideration to the sparse weather data that typically exists.

2.9.5 Given the extent of the interior damage and the amount of water held in the fiberboard and insulation is much larger than would be expected of a couple of wind failed seams, it is our opinion that there are a multitude of breaches spread throughout the area.

2.9.6 Given the diffuse and sporadic damage to the roof, it is our opinion that patching is impractical and will not produce a satisfactory result (i.e. a roof that does not leak without multiple call backs.) The water damage to the fiberboard has also reduced adhesion between the membrane and the fiberboard, (no stress plates were observed, indicating that the cover board is adhered to the membrane). Water compromises the adhesion between the EPDM and the cover board (saturation of the fiberboard also destroys its strength), this roof is now more vulnerable to further wind damage in the future (the fully adhered system is gradually becoming a loose-laid unballasted system due to storm-created openings and water damage to the fiberboard).

2.9.7 Water damaged fiberboard is present beneath the majority of cuts performed. This material must be removed, it is generally 'counted on' to provide some of the R value of the roof, but the moisture held in the material reduces the value of the insulation. To remove it the most feasible method is cutting apart the membrane. First, if this membrane were undamaged, it would require testing to patch into with like materials. Tie-in or reinstalling roofing will require establishing that the as-is material conforms to the ASTM D4637 requirements for newly manufactured EPDM roofing (i.e. per IBC 104.11, ASTM D4637 for equivalent in performance to new roofing for breaking strength, elongation, tearing strength, low temperature bend, etc. Weather resistance testing per G151 and G155 will 'consume' parts of the roof in attempting to re-establish their validity for reinstallation.). Thus, without testing, new roofing will be required in this area as well. With testing, there will still be some shortage of material.

104.11 Alternative materials, design and methods of construction and equipment. The provisions of this code are not intended to prevent the installation of any material or to prohibit any design or method of construction not specifically prescribed by this code, provided that any such alternative has been *approved*. An alternative material, design or method of construction shall be *approved where* the *building official* finds that the proposed design is satisfactory and complies with the intent of the provisions of this code, and that the material, method or work offered is, for the purpose intended, at least the equivalent of that prescribed in this code in quality, strength, effectiveness, *fire resistance*, durability and safety.

104.11.2 Tests. Whenever there is insufficient evidence of compliance with the provisions of this code, or evidence that a material or method does not conform to the requirements of this code, or in order to substantiate claims for alternative materials or methods, the *building official* shall have the authority to require tests as evidence of compliance to be made at no expense to the jurisdiction. Test methods shall be as specified in this code or by other recognized test standards. In the absence of recognized and accepted test methods, the *building official* shall approve the testing procedures. Tests shall be performed by an *approved agency*. Reports of such tests shall be retained by the *building official* for the period required for retention of public records.

1507.12 Thermoset single-ply roofing. The installation of thermoset single-ply roofing shall comply with the provisions of this section.

1507.12.1 Slope. Thermoset single-ply membrane roofs shall have a design slope of a minimum of one-fourth unit vertical in 12 units horizontal (2-percent slope) for drainage.

1507.12.2 Material standards. Thermoset single-ply roof coverings shall comply with ASTM D 4637, ASTM D 5019 or CGSB 37-GP-52M.

Source: 2009 International Building Code.

This is a hotel complex, protection of egress and lighting should be provided during construction to protect pedestrians (including employees of the businesses).

Add the following subsections to Section 3403.1 in Chapter 34 Existing Structures in the "2009 Edition of the International Building Code."

3403.1.1 If, within any twelve (12) month period, alterations or repairs costing in excess of fifty (50) percent of the then physical value of the building are made to an existing building, such building shall be made to conform to the requirements of this Code for new buildings.

3403.1.2. If an existing building is damaged by fire or otherwise in excess of fifty (50) percent of its then physical value before such damage is repaired, it shall be made to conform to the requirements of this Code for new buildings.

3403.1.3 If the cost of such alterations or repairs within any twelve (12) month period or the amount of such damage as referred to in 3403.1.2 is more than twenty-five (25) percent but not more than fifty (50) percent of the then physical value of the building, the portions to be altered or repaired shall be made to conform to the requirements of this Code for new buildings to such extent as the Building Official may determine.

3403.1.4 For the purpose of this section, physical value of the building shall be determined by the Building Official.

3403.1.5 If the occupancy of an existing building is changed, the building shall be made to conform to the requirements of this Code for the new occupancy. If the occupancy of only a portion of an existing building is changed and that portion is separated from the remainder as stipulated in Section 706, then only such portion need be made to conform.

3403.1.6 Repairs and alterations, not covered by the preceding paragraphs of this section, restoring a building to its condition previous to damage or deterioration, or altering it in conformity with the provisions of this Code or in such manner as will not extend or increase an existing non-conformity or hazard, may be made with the same kind of materials as those of which the building is constructed; but not more than twenty-five (25) percent of the roof covering of a building shall be replaced in any period of twelve (12) months unless the entire roof covering is made to conform with the requirements of this Code for new buildings.

Source: Jefferson County amendments to Building Code.

Architectural services are needed here for proper reconstruction. Firstly, review/revision/acceptance of the ceiling/roof assembly and the current fire-rating of this structure or a sealed detail for reconstruction.

Architect should review and establish fire-rating requirements for both the roof assembly and the roof membrane based on their review of existing construction. Most commercial projects require at least a Class C roof covering (See 2009 IBC Table 1505.1). This requirement does not address the requirements for the roof assembly, which is more than just the membrane and depends on occupancy/use group and is typically a UL-listed assembly. The architect must provide a sealed detail at this location if the existing UL assembly cannot be determined.

Though we are familiar with the code requirements here, an Alabama licensed architect is required to seal an architectural detail for the appropriate repair/membrane replacement.

3.0 **Conclusions:**

3.1 Given the interior water damage, the roof assembly is water damaged to varying degrees. The existing roof deck sheathing is metal. As part of the re-roofing it will be necessary to secure approval of the decking (by the building official) that it is acceptable for re-use. Corrosion on the bottom has been noted (Figure 81, Building 3). The extent of topside corrosion cannot be fully known until the roof membrane is removed. Several areas had little to no corrosion and high efflorescence, it is our expectation that this is due to recent water leakage in these areas associated with storm-created openings above. Metal deck, where it is more highly corroded is questionable for re-use and should be fully exposed and inspected for re-use (Alternative Materials, 2006 IBC 104.11), or replaced to satisfy manufacturer requirements for solid substrate.

3.2 Damage from the storm has allowed water to effectively destroy the insulation value of the underlying materials requiring complete replacement of the roof membrane to access and replace the damaged insulation. According to information provided by the owner the damage on the interior occurred as part of the storm event.

3.3 There are water damaged materials under the EPDM, the top material is fiberboard, and is fully adhered (no stress plates were found during roof cores, nor were any visible through the membrane). The water-damaged materials must be removed as it is caused by the storm damage to the membrane. This water damage has reached the interior ceiling tile, thus whatever insulation boards are present are also expected to be water damaged in areas (core cuts support this). These damaged boards should be replaced as the water reduces their R value and the most expedient means to dry them out is to replace them.

3.4 As part of the re-roofing, it will be necessary to secure approval (by the building official) for reuse of any of the metal decking that is left in place, it must also be satisfactory to the insulation board manufacturer, membrane manufacturer and the building official.

3.5 Wind damaged the metal panel roofs, the parapet wall top caps and the roof penetration covers. These elements will also require removal and replacement.

3.6 Any attempt to "re-use" light weight insulating concrete will require either drying the system completely, or removal and replacement. Once the system is either dry or replaced and fully cured, fastener testing (for mechanically attached insulation will be needed). It is our expectation that large portions of this roof will be too wet when exposed and will also be damaged or destroyed by the water intrusion (See roof cores).

3.7 Repair to all roof-mounted HVAC units will be 'forced' due to removal and disconnection to replace roofing. IECC requires repairs to meet current code (2009 IECC 101.4.3). As some units are older, and some are currently in a hail-damaged condition there are several options to establish conformance. These options apply to any HVAC unit that is detached from the roof, whether damaged by the storm or not.

3.8 IECC requires repairs to meet current code (2009 IECC 101.4.3). As the units are currently in a damaged condition there are several options to establish conformance.

> 101.4.3 Additions, alterations, renovations or repairs. Additions, alterations, renovations or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code. Additions, alterations, renovations or repairs shall not create an unsafe or hazardous condition or overload existing building systems. An addition shall be deemed to comply with this code if the addition alone complies or if the existing building and addition comply with this code as a single building.

Source: 2009 International Energy Conservation Code

A) Test units as-is to see if they conform to current codes for efficiency. If so, reinstall without any work needed. If the unit efficiency tests fail, select B, C, or D. (Least cost, highest risk of wasting money on testing).

B) Comb the units, then test, if the unit efficiency tests fail, select C, or D.

C) Replace coils with OEM coils, then test, if the unit efficiency tests fail, select D and replace the units. (Coil availability is unknown).

D) Omit all the testing and replace the units. (Highest cost, least risk of wasting money on testing, least schedule impact, etc.)

3.9 The roof system (open web steel joist) was originally designed for the weight of a BUR system (see roof cores). Removing it reduces the load on the roof and creates some question as to an increase in net uplift on the joists, based on their age, they will need uplift bridging at a minimum at the first interior bottom panel point, as well as evaluation and design for the changed uplift conditions due to the weight change of the EPDM system (about 2 psf) from the BUR+EPDM (about 5.5 +2 = 7.5 psf), this needs to be done by a licensed civil or structural engineer.

At the same time, a full inspection of the LWIC/deck should be perforemed. If the engineer of record finds the deck acceptable it can remain in place, provided it is still in good condition similar to currently manufactured deck. Some sheets (based on observed rust) should be planned to be replaced at this time, with the deck attachment schedule and gage determined by the engineer with sealed drawings for the replacement and how it is to be attached to the existing materials.

3.10 Various additional items of note:

1503.3 Coping. Parapet walls shall be properly coped with noncombustible, weatherproof materials of a width no less than the thickness of the parapet wall.

[P] 1503.4 Roof drainage. Design and installation of roof drainage systems shall comply with Section 1503 and the *International Plumbing Code*.

1503.4.1 Secondary drainage required. Secondary (emergency) roof drains or scuppers shall be provided where the roof perimeter construction extends above the roof in such a manner that water will be entrapped if the primary drains allow buildup for any reason.

Secondary drains need to be provided (if missing), primary drains must be checked for size to re-use.

1504.3 Wind resistance of nonballasted roofs. Roof coverings installed on roofs in accordance with Section 1507 that are mechanically attached or adhered to the roof deck shall be designed to resist the design wind load pressures for components and cladding in accordance with Section 1609.

1504.3.1 Other roof systems. Roof systems with built-up, modified bitumen, fully adhered or mechanically attached single-ply through fastened metal panel roof systems, and other types of membrane roof coverings shall also be tested in accordance with FM 4474, UL 580 or UL 1897.

1504.3.2 Metal panel roof systems. Metal panel roof systems through fastened or standing seam shall be tested in accordance with UL 580 or ASTM E 1592.

Exception: Metal roofs constructed of cold-formed steel, where the roof deck acts as the roof covering and provides both weather protection and support for structuralloads, shall be permitted to be designed and tested in accordance with the applicable referenced structural design standard in Section 2209.1.

1504.5 Edge securement for low-slope roofs. Low-slope membrane roof system metal edge securement, except gutters, shall be designed and installed for wind loads in accordance with Chapter 16 and tested for resistance in accordance with ANSI/SPRI ES-1, except the basic wind speed shall be determined from Figure 1609.

1504.6 Physical properties. Roof coverings installed on low-slope roofs (roof slope $\leq$ 2: 12) in accordance with Section 1507 shall demonstrate physical integrity over the working life of the roof based upon 2,000 hours of exposure to accelerated weathering tests conducted in accordance with ASTM G 152, ASTM G 155 or ASTM G 154. Those roof coverings that are subject to cyclical flexural response due to wind loads shall not demonstrate any significant loss of tensile strength for unreinforced membranes or breaking strength for reinforced membranes when tested as herein required.

1504.7 Impact resistance. Roof coverings installed on low-slope roofs (roof slope < 2: 12) in accordance with Section 1507 shall resist impact damage based on the results of tests conducted in accordance with ASTM D 3746, ASTM D 4272, CGSB 37-GP-52M or the "Resistance to Foot Traffic Test" in Section 5.5 ofFM 4470.

4.0 Requirements / Recommendations

Based on the findings during the limited investigation we recommend the following steps be taken.

Engineering will be required to check joists for changed uplift loads and to accept or replace metal deck (a global evaluation should be performed).

For re-roofing we do not see any items that require partial engineering. Follow 2009 International Building Code, and 2009 International Energy Conservation Code, with local amendments.

Contractor is solely responsible for adherence to all applicable safety requirements for work at heights.

1) Prior to starting work, consult with city on pedestrian protection and lighting requirements for the work.
2) During work that affects access to the businesses, protect pedestrians adequately from work and falling debris, tools, etc, (i.e. covered scaffolds, or similar. Such work is the means and methods of the contractor.
3) Temporarily disconnect rooftop air conditioner units as required to remove and replace roofing under and around air conditioner. NOTE: AIR CONDITIONER MUST REMAIN IN PLACE AND WORKING IF WORK IS DONE DURING SUMMER MONTHS.
4) Remove all layers of roofing including metal roofs and parapet cap, underlayment, cover board, rigid insulation, previous roof membranes to lightweight insulating concrete.
5) Remove any unacceptable metal roof deck, unless approved to remain in place by licensed civil or structural engineer. Replace as required per sealed drawings (profile, metal gage, attachment schedule). Secure approval of local building official for reuse of existing roof deck.
6) Contractor's option: Dry out LWIC or replace. If LWIC is to be replaced, verify against available fire-rated assemblies.
7) Determine fire-rating requirements for the roof assembly. Architect to review roof assembly requirements and items listed above and issue sealed drawings for reconstruction of ceiling and roof membrane/assembly UL rated system as required.
8) Conform with any special inspection or structural observation requirements from the architect's or engineer's sealed plans and coordinate approval with the building official.
9) Roof covering shall conform with UL requirements on existing construction documents unless specifically reviewed, revised, and sealed by a licensed architect (i.e. a new UL rated roof assembly including the ceiling), and approved by the building official. Contractor Note: Secure architectural services for this if the existing plans cannot be located or if a change to the UL assembly is desired.
10) Verify placement of vapor retarder per (energy) code.
11) Once LWIC is acceptable for installation of base sheet, install per manufacturer's requirements and test mechanical fasteners as required.
12) Conform to current energy code for above roof deck insulation. Install base rigid insulation to meet current energy code (Contractor shall verify R-20ci applies). Attach per manufacturer's requirements, or install new insulation per Architect's sealed drawings (or manufacturer tested attachment schedule) to meet code. Insulation requirements for roofs have changed since the roof was originally constructed.

13) Roofing components will require attachment schedule per FM or manufacturer for code imposed loads at 90 mph, Exposure C.
14) Review of drainage on roof (drain quantity and size, conductors, leaders, scuppers, etc.) by mechanical engineer if not constructed as originally specified by a licensed mechanical engineer. Review, per International Plumbing code, should verify all items for 100 year hourly rainfall per P1106.1 (See IBC 1503.4), or similar document acceptable to the building official. Modifications may be required due to age of construction. If existing plans can be found, this step may be eliminated if the drainage plans are constructed/reconstructed as shown on those plans and those plans were stamped by a licensed mechanical engineer, and secondary drains are provided per current codes. We do not have Mechanical Plans for these buildings.
15) Roof drainage per IBC 1503.4, is for the number of scuppers/interior drains, not a study of the impact of this drainage to the watershed/infrastructure. Note: Secondary drainage is required per 2009 IBC 1503.4.1 when parapets exist such that water will be entrapped if the primary drains allow build-up for any reason.
16) Install topside tapered insulation per mechanical engineer's sealed layout drawings and attach per manufacturer's requirements for 90 mph uplift. Note: This is in addition to any insulation on the roof for energy code conformance (required per code as well as EPDM manufacturer). Attach to base insulation sheet per manufacturer's requirements.
17) Install tapered insulation per manufacturer requirements, including secondary deflection to scuppers or overflow drains (i.e. crickets). Note: the ¼" per foot slope requirement applies at the low roof edge against the parapet wall, full length of the wall between the through-the-wall scuppers.

1507.12 Thermoset single-ply roofing. The installation of thermoset single-ply roofing shall comply with the provisions of this section.

1507.12.1 Slope. Thermoset single-ply membrane roofs shall have a design slope of a minimum of one-fourth unit vertical in 12 units horizontal (2-percent slope) for drainage.

18) We suggest contacting GAF tapered roofing group (or similar) for further assistance on a complete tapered system.
19) Replace damaged metal roofs, ridge covers, and parapet caps.
20) Replace roof jacks, vents, and other roof items (more cost effective than removing, securing approval from building official to reinstall).
21) Replace roof flashings and other roof metal (more cost effective than securing re-approval for reinstallation of materials).
22) Install replacement roofing per manufacturer's requirements. Note: Replacement roofing shall match existing roofing (EPDM). This is to avoid engineering evaluation due to 5% weight change on the roof. Note: Reducing the weight creates larger uplift on the roof deck, open web steel joists, etc, and is not advised.
23) Construction and engineering (diaphragm evaluation and connection/collector review) will have to comply with ASCE 7-05. Licensed civil or structural engineer of record shall verify. Change to uplift based on change to roof dead

weight will necessitate a full review of load path and structural framing. As much as practical, we advise against changing the dead load on this roof.

24) Provide/obtain/perform uplift testing as required.

> **1504.3 Wind resistance of nonballasted roofs.** Roof coverings installed on roofs in accordance with Section 1507 that are mechanically attached or adhered to the roof deck shall be designed to resist the design wind load pressures for components and cladding in accordance with Section 1609.
>
> **1504.3.1 Other roof systems.** Roof systems with built-up, modified bitumen, fully adhered or mechanically attached single-ply through fastened metal panel roof systems, and other types of membrane roof coverings shall also be tested in accordance with FM 4474, UL 580 or UL 1897.

Note: This testing is generally manufacturer testing included with stock products.

25) All rooftop penetrations, drains, skylights and other items (HVAC) will have to be lifted and reset. Reconstruct roof curbs as needed. Items to be reinstalled must be tested to demonstrate equivalence to new items, per code, and energy/air infiltration requirements, per IECC. Contractor's option: Discard and replace items with new units that meet code/engineer specified design pressures.

26) Inspect air conditioners for efficiency, if older, test for efficiency. If units do not meet current energy code efficiency requirements, replace AC units.

27) Install noncombustible, weatherproof (i.e. metal) perimeter flashing per ES-1 standard and code and manufacturer's requirements, typically with a cleat into the parapet wall. (See IBC 1504.5)

> **1504.5 Edge securement for low-slope roofs.** Low-slope built-up, modified bitumen and single-ply roof system metal edge securement, except gutters, shall be designed and installed for wind loads in accordance with Chapter 16 and tested for resistance in accordance with Test Methods RE-1, RE-2 and RE-3 of ANSI/SPRI ES-1, except V_{ult} wind speed shall be determined from Figure 1609A, 1609B, or 1609C as applicable.

28) Remove and replace water-damaged ceiling tiles, ceiling grid, and light fixtures. Replace water damaged ceilings and light fixtures (Electrician needed for light fixtures). Tiles shall match existing. Verify tiles are not required to be fire-rated (contact Architect, or find existing sealed architectural drawings) when they form a continuous system.

29) **Energy code requirements have not been finalized. Integration of existing building systems with vapor retarders, application of sealants, flashing and other items are the responsibility of the contractor.**

30) Contractor shall remain on alert for signs of mold during repairs and construction.

31) Alternate construction techniques may be acceptable provided a licensed design professional approves and signs and stamps plans and or shop drawings for these repairs. Means and methods are the Contractor's responsibility.

32) Stability during construction is the responsibility of the Contractor. Structure as detailed is intended to be stable once all sheathing and fasteners are in place.
33) Conform with any special inspection and testing schedules issued by the engineer.
34) Remove water damaged interior materials and effect repairs pursuant to current published guidelines by the Clean Trust (formerly the Institute for Inspection, Cleaning, and Restoration Certification, or IICRC) guidelines.
35) Roofing, siding, and sheathing attachment will have to comply with City of Bessemer wind speeds. This appears to be 90 mph, Exposure C, but engineer / contractor shall verify).

Note: Contractor shall make certain any roofing to be installed meet the requirements of the code in force through verification with the building official. Selection and installation of appropriate wind-rated and fire-rated roofing in compliance with the manufacturer's requirements and any associated third-party inspections required by the jurisdiction are the responsibility of the contractor.

Discovery is ongoing. Additional testing and inspections may need to be performed and additional and/or supplemental information and opinions may be contained in future reports issued by Forensic Building Science, Inc. This report is the exclusive property of the client noted previously and cannot be relied upon by a third party. Copies of this report are released to third parties only by written permission of the client.

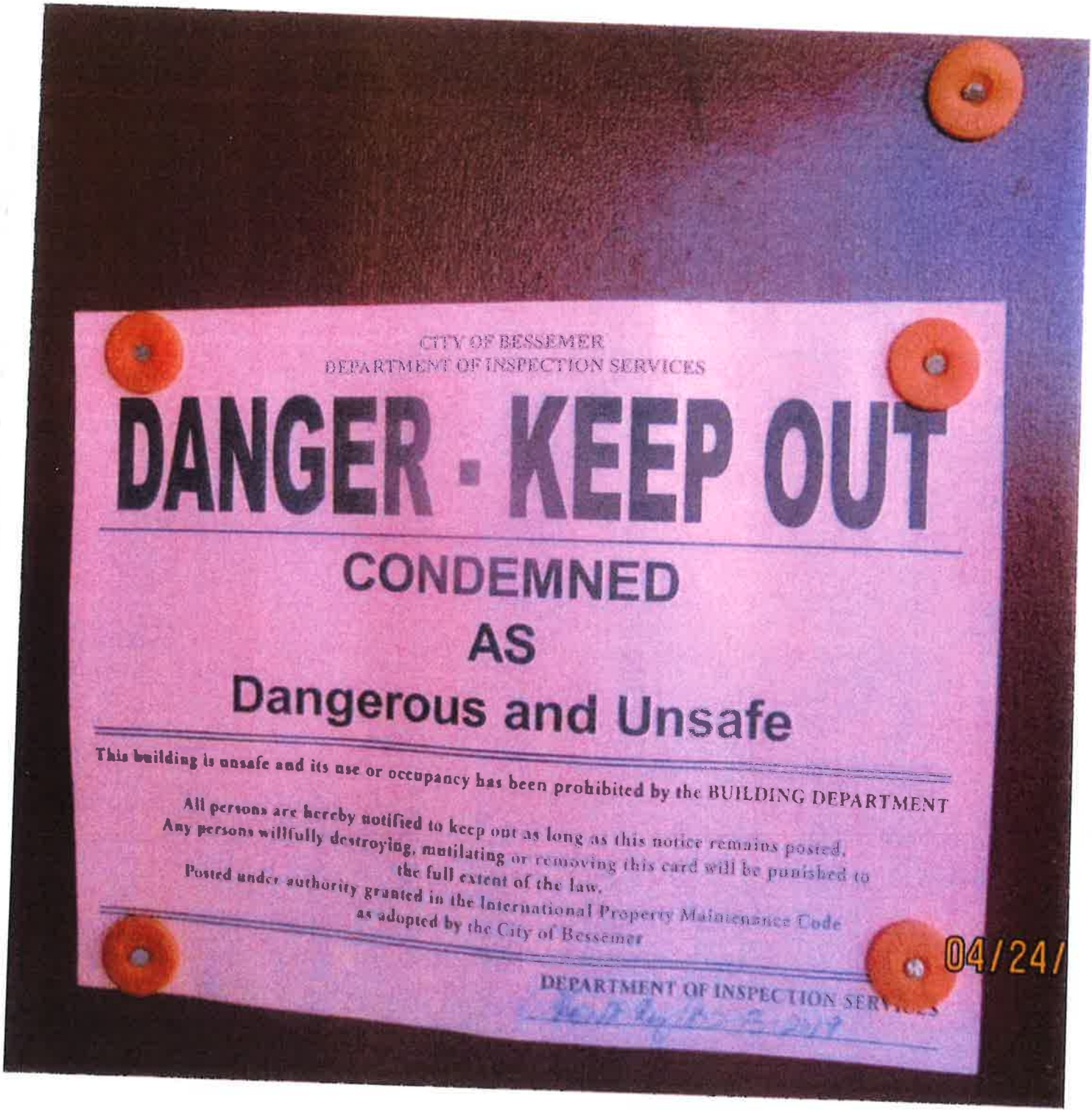
Please contact our office should you have any questions or need additional information.

Respectfully submitted,

Digitally Signed
Tom Irmiter, President Forensic Building Science, Inc.
International Code Council Residential Building Inspector
and Property Maintenance Inspector, cert #5313388

August 20, 2015
Date


04/24/2019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DEPARTMENT OF INSPECTION SERVICES
DANGER - KEEP OUT
CONDEMNED
AS
Dangerous and Unsafe
This building is unsafe and its use or occupancy has been prohibited by the BUILDING DEPARTMENT
All persons are hereby notified to keep out as long as this notice remains posted.
Any persons willfully destroying, mutilating or removing this card will be punished to the full extent of the law.
Posted under authority granted in the International Property Maintenance Code as adopted by the City of Bessemer
DEPARTMENT OF INSPECTION SERVICES
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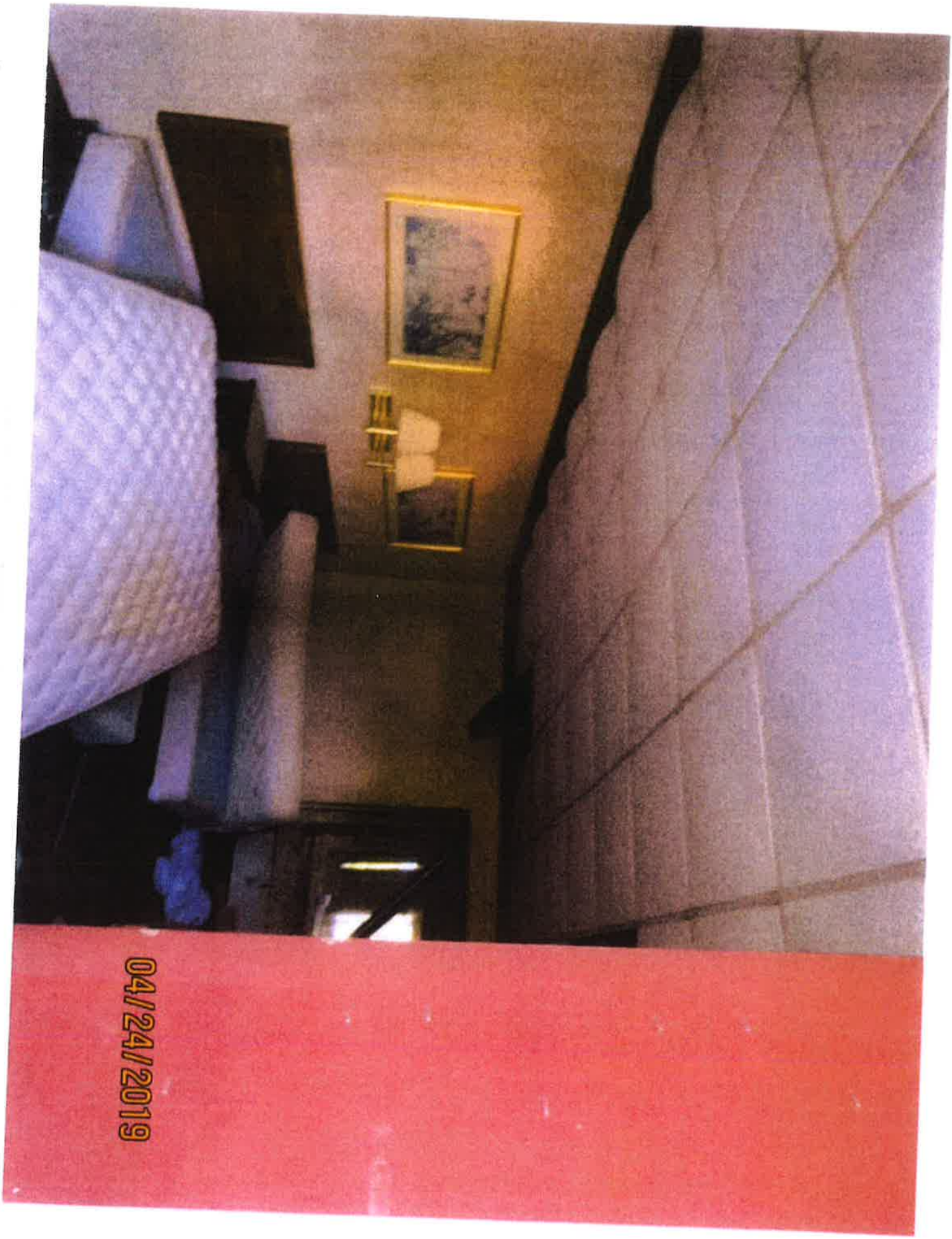
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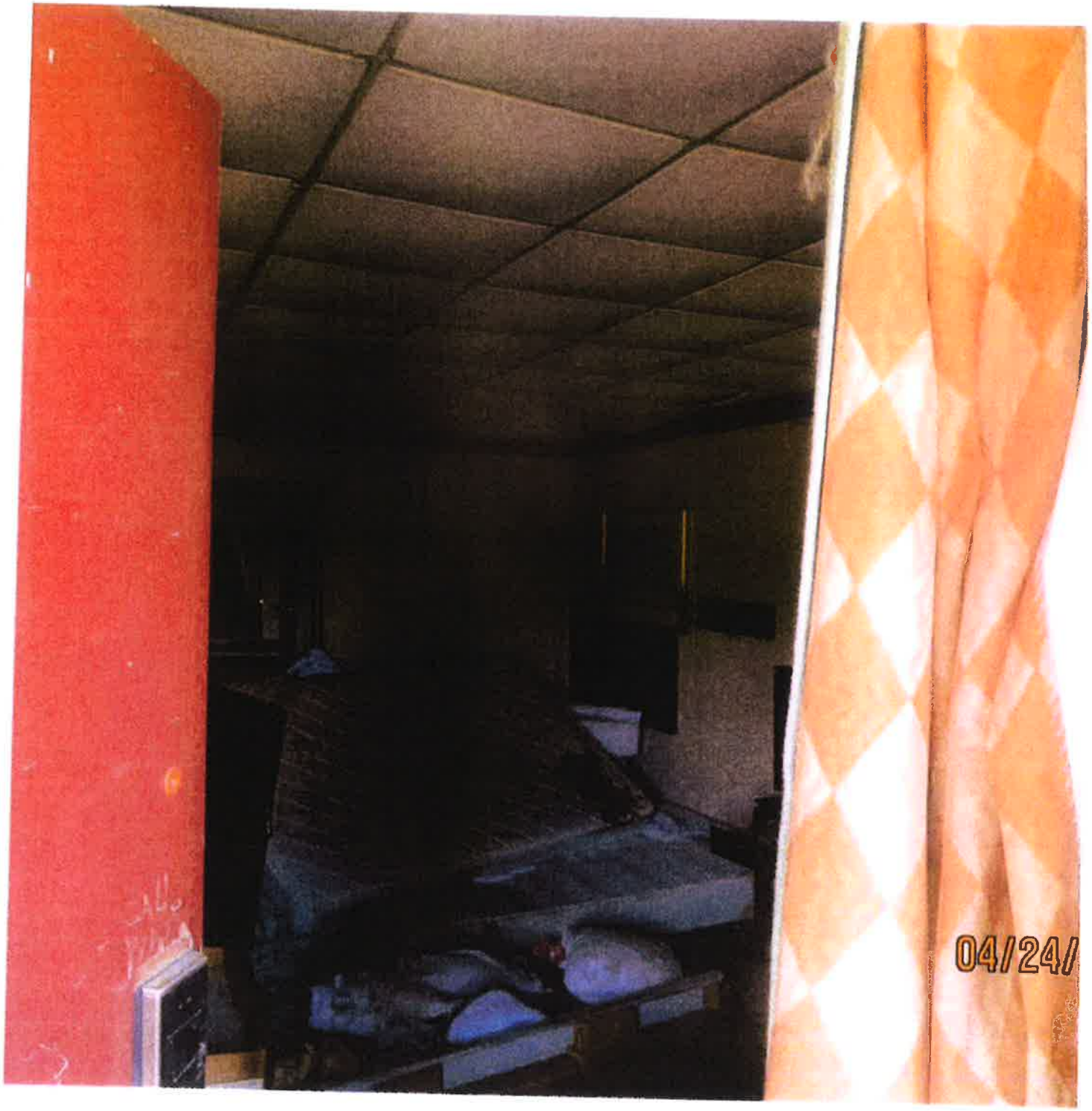
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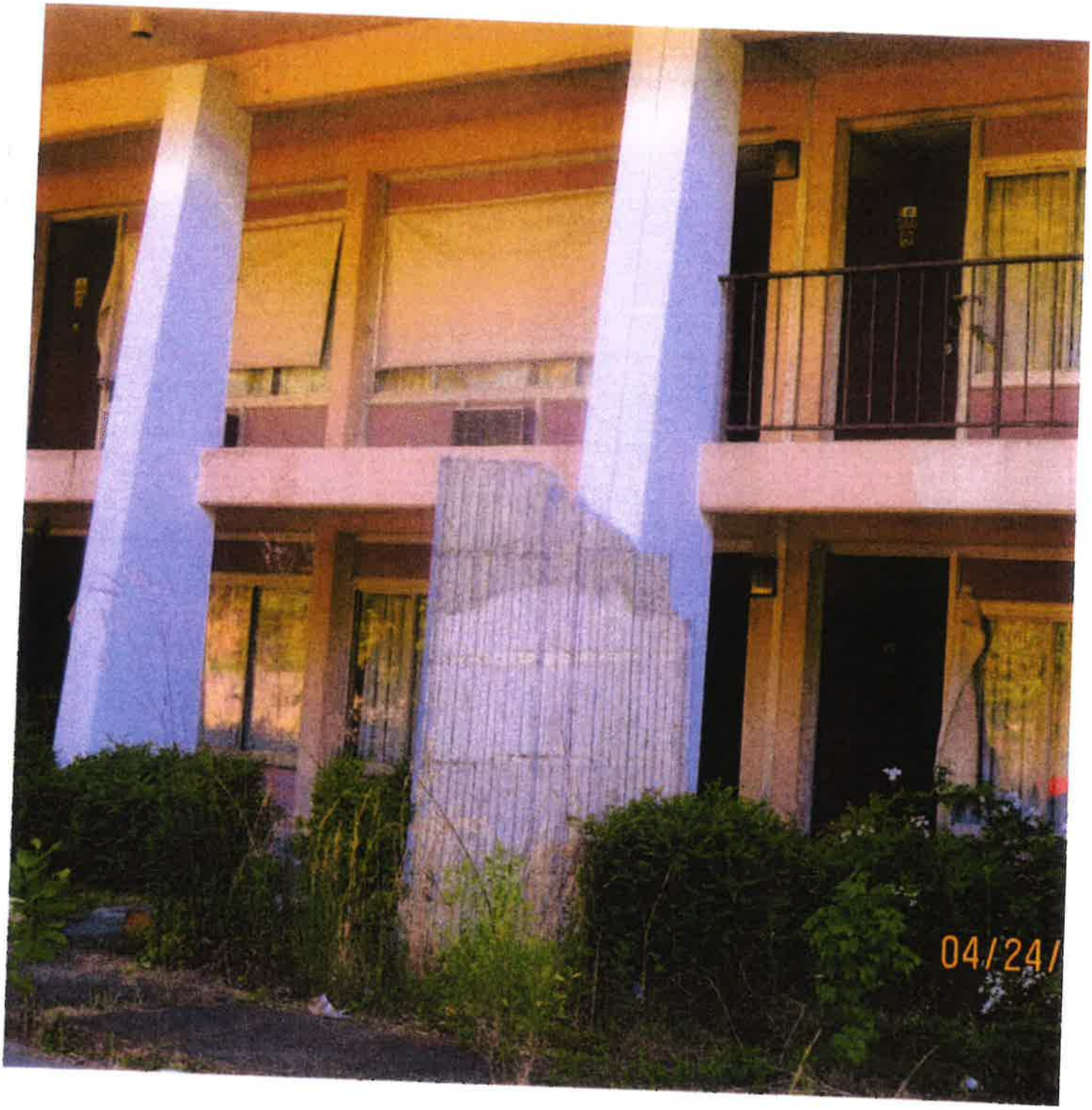
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IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ALABAMA
SOUTHERN DIVISION

HAMAN, INC.

Plaintiff,

v.

CHUBB CUSTOM INSURANCE COMPANY, ET AL.

Defendant.

NO. 2:18-CV-01534-KOB

PLAINTIFF HAMAN, LLC'S DESIGNATION OF EXPERT WITNESSES

Comes now the Plaintiff and lists the following expert witnesses pursuant to Fed. R. Civ. P. 26(a)(2)(B).

1. Charles "Chuck" Howarth – The Howarth Group, 137 Third Avenue, North, Franklin, Tennessee 37064, telephone (615) 550-5500, facsimile (615) 550-5501.

Mr. Howarth is an insurance consultant, appraiser and adjuster with over thirty-six (36) years of insurance claims experience. He is knowledgeable about the specific damages to the Knights Inn that were caused by both the fire loss and the storm loss. He and Arthur Grandinetti and Sarah Grandinetti performed detailed inspections of the premises at Knights Inn. Mr. Howarth will testify concerning damage assessments made during inspections made by The Howarth Group as they relate to damage, repair costs, replacement costs and actual cash value. Mr. Howarth's curriculum vitae, list of prior expert testimony, valuation of

loss, summary of opinions and hourly rate are attached hereto under Exhibit "A".

Mr. Howarth may also respond to any other testimony provided in his area of expertise, including any testimony that is offered by the Defendant Chubb. The Howarth Group prepared a report of observations of Knights Inn. That report related to the fire loss has been previously produced in this litigation and consists of 225 pages and numerous photos.

The Howarth Group has also prepared a separate wind and roofing damage report dated January 10, 2016, comprising the sum of 52 pages, and numerous photos. That report and photos has also been provided.

Mr. Howarth will base his opinions upon personal inspections and upon inspections of The Howarth Group.

Mr. Howarth has also reviewed the report of Tom Irmiter, Forensic Building Science, Inc., a roofing specialist.

Mr. Howarth is familiar with the reports and photographs provided by the Defendant Chubb.

Mr. Howarth is familiar with the insurance principles and policy terms and conditions and the requirements of good faith. He is particularly familiar with the appraisal process procedures and the policy in question. He is critical of the claims handling and of the appraisal conduct of Chubb and its representatives.

Mr. Howarth has had numerous meetings and interviews with the owner of the Knights Inn.

Mr. Howarth's opinions are based upon his knowledge, skill, expertise, training, education, and review of his firm's work materials, and the work materials of others and any other documents produced or generated in this litigation that were supplied to him. He has been provided with the Bates documents produced by Defendant. Mr. Howarth has not been provided with any deposition testimony in the case because there have been no depositions taken

prior to his designation as an expert.

2. Sarah Grandenetti – Sarah assisted Mr. Howarth with the Knights Inn claim. Her work product is included in the inventory loss estimate. Her curriculum vitae, valuation of loss, list of prior expert testimony and summary of opinions are provided herewith under Exhibit "B".

3) Tom Irmiter, President Forensic Building Science, Inc., 2168 Juliet Avenue, St. Paul, MN 55105, telephone 651-222-6509.

Mr. Irmiter is a licensed building inspector and appraiser with over forty-three (43) years of experience. He has investigated literally thousands of storm and fire damage claims. He inspected the premises of Knights Inn and made a building damage assessment, listed as an initial report, rendered August 20, 2015. That detailed report has been provided to counsel for Chubb.

Mr. Irmiter will testify concerning the storm claims and the scope of the damage.

Mr. Irmiter may respond to any testimony provided in his area of expertise and any other testimony from any other witness concerning his area of expertise, including his review of opinions concerning the testimony of the Defendant's representatives.

Mr. Irmiter visited the premises, made his own studies, photographs, calculations, observations and reports. His photographs are attached to his report.

Mr. Irmiter's opinions are based upon his knowledge, skill, expertise, training, education and actual inspections, inspection reports and work materials of others, and other documents produced and/or generated in this litigation. Mr. Irmiter's resume, expert testimony list and compensation schedule is attached hereto under Tab "C".

4. Arthur Grandinetti - Arthur's work product, his evaluation of the losses, is including in The Howarth Group's estimate. He has personal knowledge of the losses and assisted with the evaluations. Those reports are referenced in The Howarth disclosures herein.

5. Plaintiff Haman, LLC reserves the right to call or elicit testimony, by deposition or at trial, from any expert witnesses designated and/or called by Defendant Chubb. Plaintiff Haman, LLC denies, however, that any such "experts" or other witnesses designated by Defendant Chubb are qualified and/or competent to testify as experts, unless and until, their qualifications to render opinions or testimony are established.

6. Plaintiff Haman, LLC reserves the right to amend and/or supplement its designation of expert witnesses pursuant to Fed. R. Civ. P. or pursuant to the Court's order with additional experts and/or opinions upon which the Defendant Chubb designates an expert and provides a report and complies with the Fed. R. Civ. P. and this Court's order and/or deposition testimony. Neither Chuck Howarth or any other Plaintiff experts have been provided with any deposition testimony in the case because there have been no depositions taken prior to this designation as an expert.

DATE: April 30, 2019.

/s/Gary V. Conchin
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CERTIFICATE OF SERVICE

I hereby certify that on the 30th day of April 2019, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system, which will send notification of such filing to the following: Wayne D. Taylor, Michelle A. Sherman, and Mark D. Hess, and I certify that I have e-mailed and mailed by United States Postal Service the document to the following non-CM/ECF participants:

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